



A review of recent developments in climate change science. Part II: The global-scale impacts of climate change

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Abstract:

This article presents a review of recent developments in studies assessing the global-scale impacts of climate change published since the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4). Literature covering six main impact sectors is reviewed: sea-level rise (SLR) and coastal impacts, ocean acidification, ecosystems and biodiversity, water resources and desertification, agriculture and food security, and human health. The review focuses on studies with a global perspective to climate change impacts assessment, although in the absence of global studies for some sectors or aspects of impacts, national and regional studies are cited. The review highlights three major emerging themes which are of importance for the policy- and decision-making process: (1) a movement towards probabilistic methods of impacts assessment and/or the consideration of climate modelling uncertainty; (2) a move towards assessing potential impacts that could be avoided under different climate change mitigation scenarios relative to a business-as-usual reference scenario; and (3) uncertainties that remain in understanding the relationship between climate and natural or human systems. Whether recent impact assessments show a changed risk of damage to human or natural systems since the AR4 depends upon the impact sector; whether the assessments are robust or not (i.e. will stand the test of time) requires additional expert judgement. However, using this judgement, overall we find an increased risk to natural systems, and in some components of human systems.

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker, Researcher

Exposure :

Climate Change and Human Health Literature Portal

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Food/Water Security, Food/Water Security, Sea Level Rise, Other Exposure

Food/Water Security: Agricultural Productivity

Other Exposure: Ocean acidification

Geographic Feature: 

resource focuses on specific type of geography

None or Unspecified

Geographic Location: 

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co-Harm (Adaption/Mitigation): 

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact: 

specification of health effect or disease related to climate change exposure

General Health Impact

Mitigation/Adaptation: 

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Resource Type: 

format or standard characteristic of resource

Review

Timescale: 

time period studied

Time Scale Unspecified